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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/900,960	05/23/2013	Dimitrios Manoussakis	3896-131719 (P-5808/1C1)	9460

32182 7590 04/25/2017

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ART UNIT	PAPER NUMBER
1798	

NOTIFICATION DATE	DELIVERY MODE
04/25/2017	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DIMITRIOS MANOUSSAKIS,
ALLEN BRADSHAW, and PAUL MARTIN

Appeal 2015-003452
Application 13/900,960
Technology Center 1700

Before HUBERT C. LORIN, KAREN M. HASTINGS, and DEBORAH KATZ, *Administrative Patent Judges*.

KATZ, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] seek our review, under 35 U.S.C. § 134(a), of the Examiner's decision to reject claims 10–12.[2] (App. Br. 1.) We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Appellants note that the appeal of the rejections in application 10/664,715 (Appeal No. 2012-001826), which is the parent of the current application, was related to this appeal. (App. Br. 4.) The rejections entered in that application were affirmed. (*See id.*)

The Examiner rejected claims 10–12 under 35 U.S.C. § 103(a) over Conway.[3] (Ans. 2–5.) Claims 1–9 and 13–20 were withdrawn previously. (App. Br. 5.) Appellants do not argue separately for the patentability of any of the rejected claims. We focus on independent claim 10 in our analysis. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Appellants' Specification is directed to blood collection tubes that use a separation medium, a "thixotropic gel," to separate phases of the blood by their density. (*See* Spec. ¶¶ 3, 5.) Thixotropic gels change from a substantially non-flowing state to a more flowable state during centrifugation. (*Id.* ¶ 5.) This change allows the gel to migrate to a position between the serum and clot portions and to separate these components of the blood. (*Id.*)

Appellants explain that their invention is of "gel [] disposed in [a] tube in a manner and geometry that is readily manufacturable, and which

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[1] The real party in interest is said to be Becton, Dickinson and Company. (App. Br. 3.)
[2] Claims 1–9 and 13–20 were withdrawn previously. (*See* App. Br. 5.)
[3] European Patent Application EP 1 107 002 A2, published June 13, 2001.

overcomes potential gel movement issues." (Spec. ¶ 6; *see also* ¶ 35.)

Specifically, Appellants explain that

> [a]ccording to the invention, a tube is provided with a gel separating material having an initial state that reflects an intermediate, transient state (during centrifugation) of a typical gel. In particular, the gel exhibits a state prior to any centrifugation that substantially resembles an intermediate state of an identical gel undergoing centrifugation in an identical container, wherein the initial state of the identical gel comprises an identical volume of the gel exhibiting a substantially planar exposed top surface.

(Spec. ¶ 19.)

Appellants' claim 10 recites[4]:

> A fluid collection tube, comprising:
> an upper end adapted for receiving a closure therein, a lower end, and a sidewall extending between the upper end and the lower end, having an inner wall and an outer wall; and
> a thixotropic gel in direct contact with a portion of the inner wall of the tube,
> wherein at an uppermost point at which the thixotropic gel contacts the inner wall of the tube, an angle between the inner wall and a tangent to an exposed surface of the thixotropic gel at a point of contact with the inner wall is from 100° to 180°, and
> wherein at a highest point at which the gel contacts the inner wall opposite the uppermost point, the angle between the inner wall and the tangent to the exposed surface of the thixotropic gel is from 70° to 100°.

(App. Br. 21–22, Claims App'x.)

Figure 5 of Appellants' Specification is reproduced below.

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[4] Claim 10 has been modified by adding indentations to separate elements of the claimed tube.

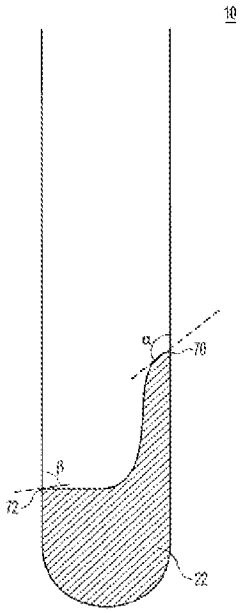

FIG. 5

Figure 5 depicts a cross-sectional view of a tube containing a separator gel material according to an aspect of the invention. (Spec. ¶ 11.) Figure 5 provides for two angles: α, which corresponds to the angle of from 100° to 180° in Appellants' claim 10; and β, which corresponds to the angle of from 70° to 100° in Appellants' claim 10. (*See* App. Br. 9; Spec. ¶ 31.)

Conway teaches blood collection tubes that include a thixotropic substance to separate components of the blood by density. (Conway ¶¶ 7–9.) Figure 2 of Conway is reproduced below.

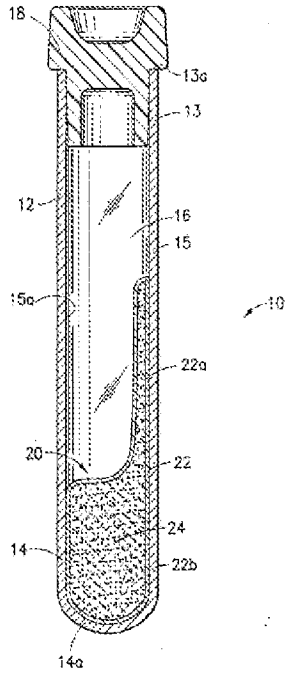

FIG.2

Conway Figure 2 depicts a cross-sectional view of a tube with a gel (24) contained within a bag (22). (Conway ¶ 23.) Although the tube depicted in Figure 2 of Conway differs from that depicted in Figure 5 of Appellants' Specification at least in that the gel is enclosed in a bag (22), Conway acknowledges that the prior art includes tubes containing separation gels in direct contact with sidewall of the tube. (*See* Conway ¶¶ 4–5; Ans. 4–5 and 7.)

The Examiner finds that the angle in Figure 2 of Conway corresponding to angle α in Appellants' Figure 5 appears to teach the angle in Appellants' Figure 5. (Ans. 2–3.) The Examiner also finds that the angle in Figure 2 of Conway corresponding to angle β in Appellants' Figure 5 appears to teach the angle in Appellants' Figure 5. (*Id.*)

The Examiner relies on Conway Figure 2 for what it would "reasonably teach one of ordinary skill in the art." (Ans. 3.) According to

the Examiner, Conway teaches that there was a need for tubes with gels able to move into position faster than conventional tubes. (*See* Ans. 3, citing Conway ¶ 6, item (vii).) The Examiner finds that the geometry of the gel depicted in Figure 2 of Conway is similar to the geometry depicted in Conway Figure 4, which illustrates movement of the gel up the side of the tube towards the top as the tube is centrifuged. (*See* Ans. 4, citing Conway ¶ 16.)

Figure 4 of Conway is reproduced below.

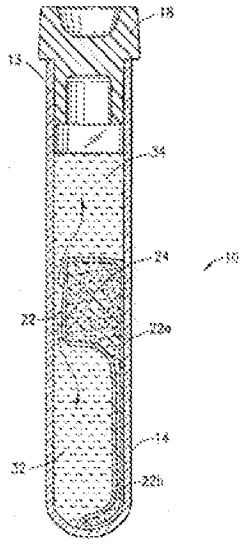

FIG.4

Figure 4 depicts a tube with a significant portion of the gel (22) positioned towards the upper end of the tube. Taken with Conway Figure 2, Figure 4 shows that during centrifugation the gel moves from the closed lower end along the side wall to the upper end.

The figures of Conway show that it would have been obvious to one of ordinary skill in the art to optimize the geometry of the gel in the tube, including angles α and β, by positioning the gel along the side wall to some extent before centrifugation and allowing it to move into position in less

time than conventional methods and devices. (*See* Ans. 3–4.) The Examiner finds that such optimization could have been achieved with routine experimentation. (*See* Ans. 4.)

Appellants argue that the Examiner improperly relies on what Conway "appears" to teach. According to Appellants, because, as the Examiner admits (*see* Ans. 3), the drawings in Conway are not to scale and Conway is completely silent as to the angles or their importance to any particular arrangement of the gel, it is improper to rely on the apparent angles in the drawings. (App. Br. 10–11; Reply Br. 2–3.)

We are not persuaded by Appellants' argument because the Examiner's rejection is not based solely on the similarity between the angles in Conway Figure 2 and Appellants' Figure 5. Instead, the Examiner's rejection is based on the teaching in Conway that reducing the movement of the gel during centrifugation is advantageous and that a gel position as in Conway Figure 2 resembles an intermediate position allowing for faster movement during centrifugation. The Supreme Court has explained that "the analysis [of obviousness] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

We are not persuaded by Appellants' argument that the case law[5]

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[5] Appellants cite to Board opinions, in addition to precedential Federal Circuit opinions. (*See* App. Br. 11.) We need address only the later, as the former are not precedential and, therefore, not binding on us.

prohibits reliance on drawings as teachings of particular sizes or proportions when the Specification is completely silent about those sizes or proportions. Specifically, Appellants cite to *Hockerson-Halberstadt, Inc. v. Avia Grp. Int'l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000). In that case the court refused to construe a claim term as limited to a quantitative relationship depicted in its patent drawings when the patentee had disavowed the relationship to overcome prior art during prosecution. Similarly, in *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1351 (Fed. Cir. 2013), the court refused to construe a claim term as limited to the actual dimensions of drawings in order to limited it to a particular structure.

Neither of these cases instructs us to ignore patent drawings that reveal a similarity between prior art and claimed subject matter. We are not persuaded that the Examiner is prohibited from considering what Figure 2 of Conway would suggest to one of ordinary skill in the art. *See In re Wright*, 569 F.2d 1124, 1127–28 (CCPA 1977) (holding that even though prior art drawings could not be used as a teaching of a specific length where there was no written description of quantitative values, the prior art could be relied upon as suggesting an increased length to address a need recognized by those in the art).

Appellants argue that instead of the specific angles between the gel and the tube walls, Conway teaches placement of a rod within the tube to ease gel flow. (App. Br. 12, citing Conway ¶ 39.) We are not persuaded by Appellants' argument because the Examiner's rejection is based on the suggestion of the gel geometry taught in Conway, specifically Figures 2 and 4, not teachings of specific angles. Even if Conway does not expressly state that Figure 2 represents an intermediate state of a gel during centrifugation,

as Appellants argue (*see* Reply Br. 3), Conway does discuss the need for moving the gel into position faster (*see* Conway ¶ 6, item (vii)). Thus, we are persuaded, under the guidance in *KSR* cited above, that the inferences and creative steps one of ordinary skill in the art would take would have rendered the claimed collection tubes obvious. We note, too, that the teaching in Conway to use a rod to ease gel flow is an alternate embodiment that does not necessarily preclude the teaching of other means to achieve the same result.

Appellants also argue that the Examiner's reasoning that the claimed angles could have been achieved by routine experimentation is improper because there is no showing in Conway that the angles claimed are a result-effective variable. (App. Br. 12–13.) We are not persuaded by this argument because Conway teaches that positioning the gel to resemble an intermediate state during centrifugation is important for increasing the flow of the gel. (Ans. 6, citing Conway ¶ 6.) Thus, the positioning, which includes the geometry and resulting angles, is the result-effective variable taught in Conway.

Appellants argue further that there is a lack of predictability or reasonable expectation of success that a thixotropic gel provided in a bag, as taught in Conway, could be arranged with the range of angles recited in claim 10. (App. Br. 13.) According to Appellants, Conway does not teach that one of skill in the art could predictably arrange the gel with the claimed angles in a bag. (*Id.*) We are not persuaded by Appellants' argument because Appellants' do not dispute that Figure 2 of Conway is similar to the embodiment depicted in Appellants' Figure 5. Thus, Conway demonstrates that one of skill in the art could reasonable expect to be able to make the

tube recited in Appellants' claim 10. Because the Examiner's rejection is based on this geometry, which would include angles between the gel and the wall of the tube, Conway demonstrates that a particular geometry can be obtained.

Appellants argue that because Conway teaches the advantage of using a bag to encapsulate the gel and keep it separate from the sample in the tube, Conway teaches away from their claimed invention, which requires the gel to be "in direct contact with a portion of the interior wall of the tube." (*See* App. Br. 14–17.) Conway acknowledges, though, that tubes containing separation gels in direct contact with the sidewall of the tube were known in the art. (*See* Conway ¶¶ 4–5; Ans. 4–5 and 7.) The teaching of an improvement over the prior art does not render that prior art nonobvious. That is, the teaching in Conway that encapsulation devices are an improvement over the prior art having direct contact with the gel does not render tubes that allow direct contact with the gel nonobvious because of a teaching away.

After consideration of Appellants' arguments, we are not persuaded that the Examiner erred in rejecting the Appellants' pending claims.

Conclusion

Upon consideration of the record and for the reasons given, the rejection of claims 10–12 under 35 U.S.C. § 103(a) over Conway is sustained.

Therefore, we affirm the decision of the Examiner.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136.

AFFIRMED